

GENERAL DESCRIPTION

The transceiver is a micro-miniature multiband FM transceiver with extensive receive frequency coverage, providing local-area two-way amateur communications along with unmatched monitoring capability.

We appreciate your purchase of our transceiver, and encourage you to read this manual thoroughly, and learn about many exciting features.

PRECAUTIONS

- ◆Refer service to qualified technicians only.
- ◆Do not disassemble or modify the transceiver for any reason.
- ◆Do not expose the transceiver under direct sunlight long or to extremely hot condition.
- ◆Do not place the transceiver on the unstable surface.
- ◆Keep the transceiver out of dust, moisture, water.
- ◆Do not operate the transceiver or charge the battery pack under explosive conditions.

SAFETY

It is important that the operator is aware of and understands hazards common to the operation of any transceiver.

WARNING

Please turn off the transceiver off at the following locations:

- ▶ In explosive atmospheres (flammable gas, dust particles, metallic powders, grain powders, etc.).
- ▶ While taking on fuel or while parking at gasoline service stations.
- ▶ Near explosives or blasting sites.
- ▶ In medical institutes or aircrafts.

CONTENTS

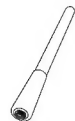
UNPACKING AND CHECKING EQUIPMENTS	01
INSTALLATION OF ACCESSORIES	03
BATTERY CHARGING	05
GETTING ACQUAINTED	07
OPERATION	13
ADVANCED OPERATION	14
ADDITIONAL FUNCTIONS AND SETTINGS	21
TROUBLESHOOTING GUIDE	23
SPECIFICATIONS	24

UNPACKING AND CHECKING EQUIPMENTS

Carefully unpack the transceiver. We recommend that you identify the items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, please contact the dealers immediately.

Standard Accessories

ITEM		QUANTITY
Antenna	UHF(short)	1
	VHF(long)	1
AC Adapter		1
Li-ion Battery		1
Belt Clip		1
Hand Strap		1
Instruction Manual		1



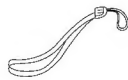
Antenna



Belt Clip



Li-ion Battery



Hand Strap



AC Adapter

INSTALLATION OF ACCESSORIES

ANTENNA INSTALLATION

The supplied antenna provides good results over the entire frequency range of the transceiver. However, for enhanced based station medium-wave and shortwave reception, you may wish to connect an external antenna, as the supplied antenna is very small and can not be expected to provide high performance at these frequencies.

To install the supplied antenna, hold the bottom end of the antenna and screw it onto the mating connector on the transceiver until it is snug. Do not over-tighten by use of extreme force. (See PIC 1)

Note:

Never transmit without having an antenna connected.

When installing the supplied antenna, never hold the upper part of antenna while screwing it onto the mating connector on the transceiver.

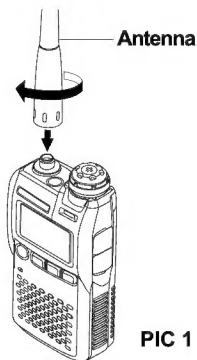
If using an external antenna for transmission, ensure that the SWR presented to the transceiver is 1.5:1 or lower, to avoid excessive feed line loss.

BELT CLIP INSTALLATION

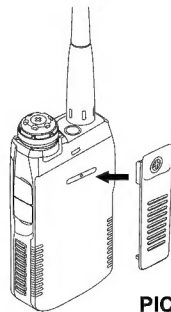
If necessary, install the belt clip into the location on the back of the battery. (See PIC 2)

Note:

Do not use the glue to fasten the screw, while installing the belt clip. Otherwise, the acrylic acid of the glue may damage the battery panel.



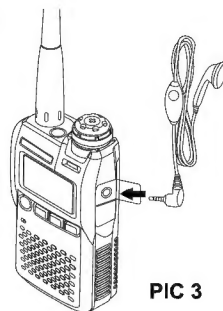
PIC 1



PIC 2

SP.&MIC. INSTALLATION

Insert the speaker/microphone plugs into the SP.&MIC. Jacks of the transceiver. (See PIC 3)



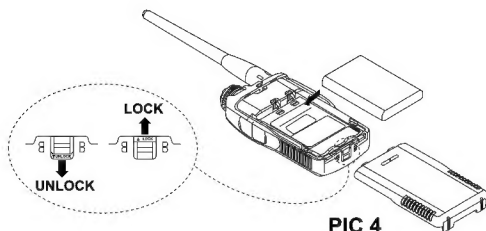
PIC 3

BATTERY PACK INSTALLATION

The battery pack is a high-performance Li-ion battery providing high capacity in a very compact package. Under normal use, the battery may be used for approximately 400 charge cycles, after which operating time may be expected to decrease. If you have an older battery that is displaying diminished capacity, you should replace the battery with a new one.

Installation of the battery is easy and quick:

1. Slide the Battery Cover to the Unlock position and then slide the Battery Cover toward the bottom to remove it.
2. Install the battery into the Battery Compartment.
3. Replace the Battery Cover and then slide the Battery Cover Latch into the Lock position.



PIC 4

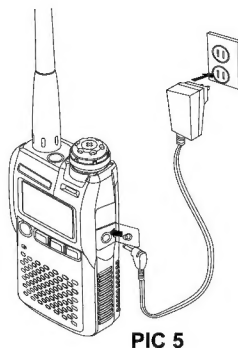
BATTERY CHARGING

If the battery has never been used, or its charge is depleted, it may be charged by connecting the Battery Charger, as shown in the illustration, to the EXT DC Jack. If only 12-16 Volt DC power is available, the optional DC Adapter (with its cigarette lighter plug) may also be used for charging the battery.

While the battery is being charged, the display will indicate (See PIC 5), this S-meter will deflect according to the charging status, and the TX/BUSY indicator will glow red.

When the charging is finished, the TX indicator will glow green.

The charger is only designed for the charging of our battery, and is not suitable for other purposes. Please be advised that the charger may contribute noise to TV and radio reception in the immediate vicinity, so we do not recommend its use adjacent to such devices.

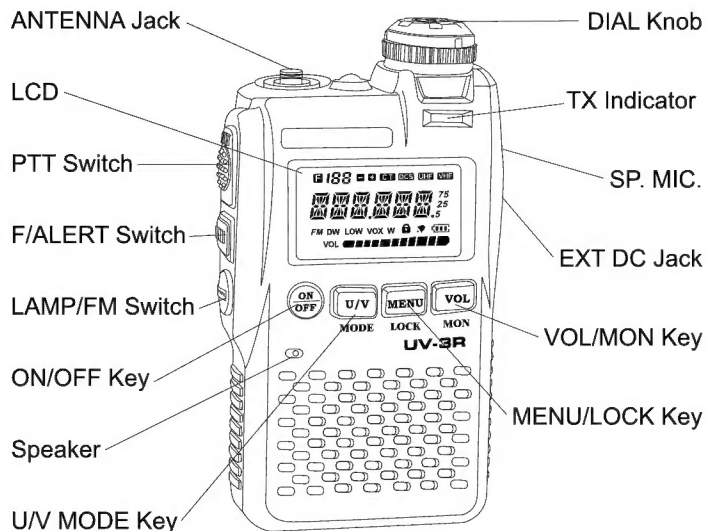


PIC 5

Important Note:

- 1) Perform the battery charging where the ambient temperature range is 41°F~95°F (+5°C~+35°C). Charge out of this range could cause damage to the battery pack.
- 2) If the charge is not completed in several hours, the battery may be deteriorated. Do not attempt to forcibly charge the battery, please contact the dealer.
- 3) If you do not use the transceiver for a long time, remove the battery pack from the transceiver, as battery leakage could cause damage to the transceiver and the battery pack.
- 4) While in storage, the charge will drain slightly over time and the battery should be recharged 50% each six months.

GETTING ACQUAINTED

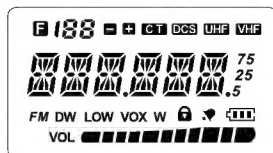


THE DEFINITION OF THE CONTROL

[DIAL]Knob	The main tuning Dial is used for setting the operating frequency, and is used for audio volume level, menu selections, and other adjustments. To rotate this Dial knob, pull the knob to unlock the mechanical dial lock, and then rotate the Dial knob.
[PTT]Switch	Press this switch to transmit, and release it to receive, after your transmission is completed.
[VOL/MON]Key	Press and Hold the key to disable the noise squelching action, allowing you to hear very weak signals near the background noise level. Just press the key, then rotate the DIAL knob to adjust
[ON/OFF]	Press and hold this key for two seconds to toggle the transceiver's power on and off.
[F/ALERT]	Just press to activate the 'Alternate' key function, such as setting Scanning, Memory Write Mode etc. Press and hold the switch to activate the Alarm function.
[MENU/LOCK]	Just press the key, entering into the MENU. Rotate the DIAL knob, will see different functions setting under the MENU. Press and Hold the key, activate the Key Lock or disable the Key Lock. (Note: After the keypad is locked, the operations of the [F/ALERT], [UV MODE], [LAMP/FM] will be invalid.)
[UV/MODE]	Just press to switch the VFO UHF Mode and VHF Mode. Press and Hold to switch frequency control between VFO and Memory Systems.
[LAMP/FM]	Just press to light the Torch. Press and Hold to activate the FM Radio Function.
F+[MENU/LOCK]	Press the [F/ALERT], then press [MENU/LOCK], to Activate the Scanning Function.
F+[UV/MODE]	Press the [F/ALERT], then press [UV/MODE], to Activate the 'Memory Write' mode (for memory channel storage).
F+[DIAL]	Press [F/ALERT], then rotate the [DIAL] knob, to increase or decrease the frequency at $\pm 1\text{MHz}$.
[VOL/MON]+ [DIAL]	Press [VOL/MON], then rotate the [DIAL] knob, to adjust the volume level.

LCD DISPLAY

The display icons appear when certain operations are performed or certain specific features are activated. It will help you to know the meaning of the indicator and know how to set functions.



ICON	DESCRIPTION
	Secondary Keypad Active (Press [F/ALERT])
188	Operating Band Number or Memory Channel Number
CT	CTCSS Operation
DCS	DCS Operation
UHF	UHF 400-470MHz
VHF	VHF 136-174MHz
FM	FM Radio(87-108MHz)
LOW	Low/High Output Power
VOX	VOX Function Active
W	Wide/Narrow Bandwidth
	Keypad Lock Active
	Keypad Beeper ON
	Battery Indicator
	Repeater Shift Direction
DW	Dual Watch Active
	Audio Volume Level

COMBINATION KEY FUNCTION

Tone Calling

Press and hold in the button [PTT] and [F/ALERT] to enter the Tone Calling Mode(1750Hz). The transceiver send out the signal (1750Hz). Release the button [F/ALERT] to exit.

Restore to Default Factory Setting

Press and hold the key [ON/OFF] + [F/ALERT] , then Power ON, the transceiver will restore to the default factory setting.

Factory Default Setting as:400.000MHz, No CTCSS/DCS, Low Output power, Battery Save, Volume Level 5, SQ 5, Key Tone ON, other settings OFF.



MENU DESCRIPTION

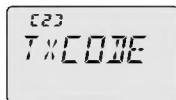
Menu Item	Description	Settings
1	RXCODE	OFF/CTCSS, DCS
2	TXCODE	OFF/CTCSS, DCS
3	SQL (Squelch)	0---9
4	LIGHT (LCD Illumination)	OFF/ON /Key
5	K TONE(Keypad Beeper)	OFF--ON
6	VOX	OFF/1---9
7	POWER (RF Output Power)	HIGH/LOW
8	DW(Dual Watch/UHF&VHF)	ON/OFF

MENU SETTING

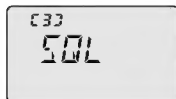
Press [MENU/LOCK], come to MENU [01]RXCODE



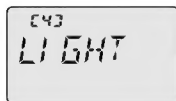
Press [MENU/LOCK], turn clockwise or counterclockwise [DIAL], come to MENU [02] TX CODE.



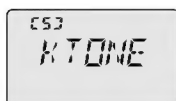
Press [MENU/LOCK], turn clockwise or counterclockwise [DIAL], come to MENU [03] SQL.



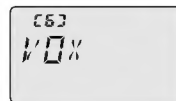
Press [MENU/LOCK], turn clockwise or counterclockwise [DIAL], come to MENU [04] LIGHT.



Press [MENU/LOCK], turn clockwise or counterclockwise [DIAL], come to MENU [05] K TONE.



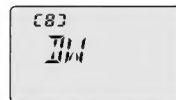
Press [MENU/LOCK], turn clockwise or counterclockwise [DIAL], come to MENU [06] VOX.



Press [MENU/LOCK], turn clockwise or counterclockwise [DIAL], come to MENU [07] POWER.



Press [MENU/LOCK], turn clockwise or counterclockwise [DIAL], come to MENU [08] DW.

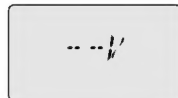


- ◆ Press the key [UV/MODE], confirm the setting, and EXIT the functions setting.
- ◆ Battery Save, Time-out Limit, Width/Narrow, only be changed via program software.
- ◆ Under the VFO mode, turn clockwise or counterclockwise [DIAL] to increase or decrease the frequency.

OPERATION

POWER ON/OFF

1. Be sure the Battery Pack is installed, and the battery is fully charged. Connect the antenna to the top panel ANTENNA jack.
2. Press and hold the key [ON/OFF], the current DC supply voltage will appear on the LCD for 2 seconds, and beeps will be heard, the display will resume its normal indication of the operating frequency.
3. To turn the transceiver off, press and hold the key [ON/OFF] again for one second.



ADJUSTING THE VOLUME LEVEL

Pull the [DIAL] knob to unlock the mechanical dial lock, then rotate the [DIAL] knob after press the key [VOL/MON], to set the desired audio level. Clockwise rotation increased the volume level.

ADVANCED OPERATION

RXCODE

You may sometimes want to hear calls from only specific persons or groups. In this case, use the selective call allows you to ignore unwanted calls from other persons who are using the same frequency.

Set the receiving signal according to the below instructions:

- 1) Press [MENU/LOCK], rotate the [DIAL] knob, come to MENU [1]: RXCODE
- 2) Then press [U/V] key, enter the set mode.
- 3) Clockwise or counterclockwise rotation of [DIAL] knob to select from OFF /67.0-754N, press [MENU/LOCK] again, to select the code (Positive or negative), such as 023N---023I.

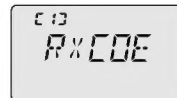
→ OFF → 67.0 → 023N → 023I

NOTE:

[CTCSS: 67Hz---254.1Hz(50 groups);

DCS: 023N-754N(104 groups)]

- 4) Press [U/V] key to save the setting and EXIT. Press [MENU/LOCK] or [PTT], EXIT to normal operation.



TXCODE

Set the transmitting signal according to the below instructions:

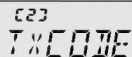
- 1) Press [MENU/LOCK] , rotate the [DIAL] knob, come to MENU [2]: TXCODE
- 2) Then press [U/V] key, enter the set mode.
- 3) Clockwise or counterclockwise rotation of [DIAL] knob to select from OFF / 67.0-754N, press [MENU/LOCK] again, to select the code (Positive or negative), such as 023N---023I.

→ OFF → 67.0 → 023N → 023I

NOTE:

[CTCSS: 67Hz---254.1Hz(50 groups); DCS: 023N-754N(104 groups)]

- 4) Press [U/V] key to save the setting and EXIT. Press [MENU/LOCK] or [PTT] , EXIT to normal operation.

A rectangular LCD display with a black background and white text. It shows the number '23' in the top left corner and the word 'TXCODE' in the center.

SQL (SQUELCH ADJUSTMENT)

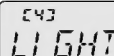
Squelch System allows you to mute the background noise when no signal being received. The Squelch system make 'Standby' operation more pleasant, and significantly reduces battery current consumption. Please adjust the Squelch level according to the following instructions:

- 1) Press [MENU/LOCK] , rotate the [DIAL] knob, come to MENU [3]: SQL
- 2) Then press [U/V] key, come to the default setting level SQL 5
- 3) Clockwise or counterclockwise rotation of [DIAL] knob to adjust between 0/1/2/3/4/5/6/7/8/9 (Default Squelch level as 5). Select the level at which the background noise is just eliminated when there is no signal. Press [U/V] key to save the setting.
- 4) Press [MENU/LOCK] or [PTT] , EXIT to normal operation.

A rectangular LCD display with a black background and white text. It shows the number '33' in the top left corner and the word 'SQL' in the center.

LIGHT(LCD ILLUMINATION ON/KEY/OFF)

UV-3R includes a reddish illumination lamp which aids in nighttime operation. The red illumination yields clear viewing of the display in a dark environment, with minimal degradation of your night vision. Three options for activating the lamp are provided:

A rectangular LCD display with a black background and white text. It shows the number '43' in the top left corner and the word 'LIGHT' in the center.

Key: Illuminates the LCD when any key pressed.

ON: Illuminates the LCD continuously.

OFF: Disables the LCD lamp.

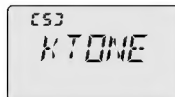
Here is the procedure for setting up the Lamp mode:

- 1) Press [MENU/LOCK], rotate the [DIAL] knob, come to MENU [4]: LIGHT.
- 2) Then press [U/V] key to enter the set mode.
- 3) Clockwise or counterclockwise rotation of [DIAL] knob to set ON/OFF/KEY
- 4) Press [U/V] key to save the setting.
- 5) Press [MENU/LOCK] or [PTT], EXIT to normal operation.

KTONE (KEYPAD BEEPER ON/OFF)

If the Keypad Beeper will inconvenience you (especially being operated in the silent room), you may disable the Beeper according to the following instructions:

- 1) Press [MENU/LOCK], rotate the [DIAL] knob, come to MENU [5]: K TONE
- 2) Then press [U/V] key to enter the set mode.



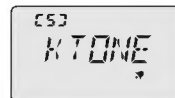
- 3) Clockwise or counterclockwise rotation of

[DIAL] knob to set ON/OFF

- 4) Press [U/V] key to save the setting.

- 5) Press [MENU/LOCK] or PTT , EXIT to normal operation.

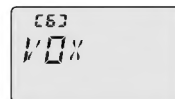
(ON-The beeper being activated, LCD displays icon. OFF-The beeper being disabled.)



VOX(VOICE OPERATED TRANSMISSION)

VOX eliminates the necessity of manually switching to the transmission Mode each time you want to transmit. The transceiver automatically switches to transmission mode when the VOX circuitry senses that you have begun speaking into the microphone. Please set according to the following instructions:

- 1) Press [MENU/LOCK], rotate the [DIAL] knob, come to MENU [6]: VOX
- 2) Then press [U/V] key to enter the set mode.
- 3) Clockwise or counterclockwise rotation of [DIAL] knob to set: OFF/1/2/3/4/5/6/7/8/9
- 4) Press [U/V] key to save the setting.



- 5) Press [MENU/LOCK] or [PTT] , EXIT to normal operation.

NOTE:

Grade 7-9: the Most Sensitive VOX Gain Level—Set under silent conditions.

Grade 4-6: the Medium Sensitive VOX Gain Level—Set under common conditions.

Grade 1-3: the Least Sensitive VOX Gain Level—Set under too much noise conditions.

When VOX function is activated, the LCD will display the ICON 'VOX'.

POWER (HIGH/LOW RF OUTPUT POWER SELECTION)

Select the High/Low RF Output Power, please set according to the following instructions:

- 1) Press [MENU/LOCK] , rotate the [DIAL] knob, come to MENU [7]: POWER
- 2) Then press [U/V] key to enter the set mode.
- 3) Clockwise or counterclockwise rotation of [DIAL] knob to set: HIGH/LOW
- 4) Press [U/V] key to save the setting.
- 5) Press [MENU/LOCK] or [PTT] , EXIT to normal operation.

When set the LOW output power, the LCD will display the ICON [LOW] , and not display the ICON [HIGH] , when set the HIGH output power.

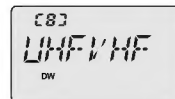


DW (DUAL WATCH FEATURE)

The transceiver's Scanning features include a two-channel scanning capability, which allows you to operate between UHF channel and VHF channel in the VFO mode, while periodically checking a user-defined channel for activity. If one channel is received the signal, the scanner will pause on that channel.

Please activate the DW feature according to the following instructions:

- 1) Press [MENU/LOCK] , rotate the [DIAL] knob, come to MENU [8]: DW
- 2) Then press [U/V] key to enter the set mode.
- 3) Clockwise or counterclockwise rotation of [DIAL] knob to set: OFF (disables the Dual Watch feature) ON (activates the Dual Watch feature)
- 4) Press [U/V] key to save the setting.
- 5) Press [MENU/LOCK] or [PTT] , EXIT to normal operation.



ADDITIONAL FUNCTIONS AND SETTINGS

MEMORY CHANNEL STORAGE (Memory Channels 01-99)

Store the Memory Channel according to the following instructions:

- Select the desired frequency while operating in the VFO mode. Be sure to set up any desired CTCSS or DCS tones, as well as any repeater offset.
- Press **【 F/A 】** button, then press **【 U/V 】** key, Channel 01-99 will flash on the LCD, rotate **【 DIAL 】** knob to store the channel between channel 01-99.
- Press **【 U/V 】** key to save the setting.
- Repeat the process above, to store other channels.

(Note: Repeater offset frequency should be set via programming software.)

EMERGENCY ALARM FEATURE

Press and hold the **【 F/A 】** button about 1/2 seconds, come to the Emergency Alarm Mode, emergency alarm will be heard, press **【 PTT 】** button, EXIT to normal operation .

FM RADIO FUNCTION

- 1) Press and hold the button **【 L/R 】** , come to the FM Radio Mode.
- 2) Rotate the **【 DIAL 】** knob to adjust the frequency. (The FM broadcast coverage is 87.0MHz to 108.0MHz, Frequency step as 100KHz).
- 3) Then press and hold the **【 L/R 】** button, EXIT the FM Radio Mode.

In the FM radio mode, the communication between the transceivers is priority. That means in the FM radio mode, when the signal come, the transceiver will automatically exit the FM radio mode.

FM RADIO SCANNING

In the FM Radio mode, press **【 F/A 】** button, then press **【 MENU/LOCK 】** key to scan the complete band. Clockwise or counterclockwise rotation of **【 DIAL 】** knob to scan the band from low to high or from high to low. When searches the certain channel, the scanning will stop at the channel. Rotate the **【 DIAL 】** knob, continuously to scan from low to high or from high to low. Press any key to exit the scanning.

TROUBLESHOOTING GUIDE

problems	solutions
No Power	Check battery installation and/or replace batteries.
Voltage Capacity Quickly Goes Out	The battery life is over, replace new one.
Can't Communicate with Other Group Members	Verify that the frequency and the CTCSS you are using are the same as those of your group members.
Hear the Voice from Other Groups	Change your CTCSS for the channel. You also need the CTCSS for all the radios in your group.

SPECIFICATIONS

Frequency Range	VHF136-174 UHF400-470MHz (Dual Band)
Channel Capacity	99
Channel Spacing	5/6.25/12.5/25KHz
Operated Voltage	3.8V
Standard Battery	1200mAh
Battery Life(5-5-90 duty cycle)	8 hours
Frequency Stability	2.5ppm(-20°C-60°C)
Operated Temperature	-30°C - +60°C
Antenna Impedance	50 Ω
Dimension	47mm x 81mm x 23mm
Weight	About 130g
R.F Power Rating	2W
Modulation	F3E
Spurious Emission	≥ 65dB
FM Noise	45dB(N)/42dB(W)
Transmitting Current	≤ 1.4A
Sensitivity (12dB SINAD)	0.2uV
Spurious Response Rejection	≤ -60dB
Audio Output Power@8Ω	≤ 1.7V
Receiver Current	≤ 400mA
Standby Current	≤ 75mA